CLARKE 1629.

A NEW ALMANACK for this present Yeare, being the first after the bissextile or leap-yeare: and from the Worlds Creation 5599.

Serving especially for 21 deg. of longit. 52 of latitude.

By EVSTACE CLARKE of *Sandridge* neare *S. Albons.*

¶ *Le ciel cessera d'estre en cessant de courir.*

Printed by the Printers to the *Vniversitie of CAMBRIDGE.*
MDCXXIX.

BIBLIOTHECA BODLEIANA

AN ALMANACK hath his name from the consideration of the Moones changes, quartiles, &c.

AL-MAEN-ACHTE,

Omnium lunarum totius anni consideratio. It is the same in some languages with *Numeration.*

The Moones Aspects are known for any yeare to come, by adding to the time of her Conjunction, for her first quartile 7 daies, 9 hour. 11 min. for her full 14 daies, 18 hour. 22 min. for her last quartile 22 daies, 3 hour. 33 min.

Her Conjunction is known by monethly addition of 29 daies, 12 hour. 42 min. Or by the *Epact* after the common rule: adde to the *Epact* the number of moneths, from *March* to the proposed moneth, including the said moneth, the summe taken from 30 leaveth the day of her change; but if the summe of addition exceed 30, subtract from 59, &c.

For the length of the daies they are had in this manner: Double the time of Sun rising, and that is the nights length: the nights length taken from 24 leaveth the daies length, halfe of which is the time of Sunne-setting.

The vulgar Notes, and revolutions, with the moveable Feasts.

Iulian account.		*Gregorian* account.
15	The Golden Number	15
14	The Sunnes Cycle	14
D	The Dominicall Letter	G
12	The Romane Indiction	12
15	The Epact	5
	Intervallum minus, or the time betwixt	
7 *week* 3 *day.*	Christmas and Shrovetide	8 *week.* 6 *da.*
Februar. 22	Quadragesima	*March* 4
April 5	Easter day	*April* 15
May 14	Ascention day	*May* 24
May 24	Whitsunday	*Iune* 3
Novemb. 29	Advent sunday	*Decemb.* 22
	Intervallum majus, or the Sundaies betwixt	
25	Trinity Sunday and Advent	24

Concerning these moveable Feasts, you may remember that the next Tuesday after the change of the Moon in *February* is Shrove-tuesday; but if the change be upon Tuesday, then the Tuesday following is Shrove-tuesday. The next Sunday after is Quadragesima; sixe Sundaies after that Easter day; five weeks after that Rogation sunday; the ensuing Thursday is Ascention day; tenne daies after that Whitsunday; the next Sunday is Trinitie; the Thursday after that is Corpus Christi, &c.

The Armes of an Almanack:

OR,

The ſeverall parts of Mans body metamorphiz'd into beaſts and monſters.

♈ Aries the Head and Face.

♉ Taurus Neck and Throate.

♋ Cancer Breaſt, Stomack, and Ribs.

♍ Virgo Bowels and Belly.

♏ Scorpio Secret members.

♑ Capricornus Knees.

♊ Gemini Armes & Shoulders.

♌ Leo Heart and Back.

♎ Libra Reines & Loines.

♐ Sagittarius Thighes.

♒ Aquarius Legges.

♓ Piſces the Feet.

HAth *Cynthia* then as in the heavenly Spheare,
Her Zodiaque in the Microcoſme no leſſe?
Or ſtandeth *Proteus*, or *Vertumnus* here
In all his ſhapes at once? What e're we gueſſe,
All *Affrick* ne're conceiv'd ſo ſtrange a ſonne
As this, by Egyptian doting braines begun.

Ianvarie hath xxxi daies.

Last quartile the 6 day, 3 quart. aft. 6 morning.
New Moon 14 day, 3 quart. aft. 9 morning.
First quart. 22 day, 2 minut. aft. 9 morning.
Full Moon 28 day, 7 minut. after 10 night.

1	New yeare.	Leo		11
2		vtzg.		12
3		virg.		13
D		libra		G
5		libra		15
6	Epiphanie.	scorp	Sunne riseth at 8	16
7		libra		17
8		scorp		18
9		sagit		19
10	Sol in ♒.	sagit		20
D	1 Sun. af. E.	sagit		G
12		capr.		22
13		capr.		23
14		aqua		24
15		aqua		25
16		aqua		26
17		pisc.		27
D	2 Sun. af. E.	pisc.		G
19		Arie		29
20		aries		30
21		taur.		31
22		taur.		Febr
23		taur.		1
24	Terme beg.	gem.		3
D		gem.		G
26		canc.	Sun riseth at 7, 30 min	5
27		canc.		6
28		leo		7
29		leo		8
30		virg.		9
31		virg.		10

FEBRVARY hath XXVIII daies.

Last quartile 4 day, three quarters after 11 at night.
New Moon 13 day, at foure and seven minutes morning.
First quarter 20 day, 26 min. after five at night.
Full Moon 27 day, 35 minutes after eight at night.

D	Septuages	Libr		G
2	Purificatio	libra		12
3		scorp		13
4		scorp		14
5		sagit		15
6		sagit		16
7		sagit		17
D	Sexages	capr.		G
9	Sol in Pisc	capr.	sunne riseth at seven.	19
10		aqua		20
11		aqua		21
12	Terme end	aqua		22
13		pisc.		23
14		pisc.		24
D	Shrovesun	Arie		G
16		aries		26
17		aries		27
18		taur.		28
19		taur.		Mar
20		gem.		2
21		gem.		3
D	Quadrages	canc.		G
23		canc.		5
24		leo		6
25	Matthias	leo	sunne riseth at sixe, and 30 min.	7
26	Emb. week	virg.		8
27		virg.		9
28		libra		10

March hath xxxi daies.

Last quartile 6 day, 10 minut. after 6 night.
New Moon 14 day, 3 minut. aft. 8 at night.
First quart. 22 day, 14 minut. before 1 morning.
Full Moon 28 day, 48 minut. after 7 at night.

D	2 Su.in Len.	Libr		G
2		scorp		12
3		scorp		13
4		scorp		14
5		sagit.		15
6		sagit		16
7		capr.		17
D	3 Su.in Len	capr.		G
9		capr		19
10	Sol in Arie	aqua	sunne riseth at 6.	20
11		aqua		21
12		pisc.		22
13		pisc.		23
14		pisc.		24
D	Midlentsun	Arte		G
16		arie.		26
17		taur.		27
18		taur.		28
19		gem.		29
20		gem.		30
21		canc.		31
D	5 Su. in len	canc		Apr.
23		leo		2
24		leo		3
25	Annunuat.	virg.	sunne rise at 5, 30 minutes.	4
26		virg.		5
27	Ini.R.Cas	virg.		6
28		libra		7
D	Palm Sund	libra		G
30		scorp		9
31		scorp		10

April hath xxx daies.

Last quartile 5 day, 6 minut. afr. 1 after noon.
New Moon 13 day at 9, 6 minut. morning.
First quart. 20 day at 6, 9 minut. morning.
Full Moon 27 day at 7, 48 minut. morning.

1		Dag		11
2		sagit		12
3		sagit		13
4		capr.		14
D	Easter day	capr.		G
6		aqua		16
7		aqua		17
8		ptis.		18
9		ptis.		19
10	Sol in Tau	ptis.		20
11		Arie	sunne rise at 5.	21
D	Low sund	arie.		G
13		taur.		23
14		taur.		24
15		gem.		25
16		gem.		26
17		gem.		27
18		canc.		28
D	2 Sun. af. Ea	canc.		G
20		leo		30
21		leo		May
22	Terme beg	virg.		2
23		virg.		3
24		libra		4
25	Mark Evan	libra		5
D	3 Sun. af. E.	scorp		G
27		scorp	sunne rise at 4, 30 minut.	7
28		sagit		8
29		sagit		9
30		sagit		10

May hath xxxi daies.

Last quart. 5 day at 7, 27 minut. morning.
New Moon 12 day, halfe an houre aft. 7 night.
First quartile 19 day, 27 minut. aft. 11 morning.
Full Moon 26 day, 13 minut. aft. 9 at night.

1	Philip & Ia.	Cap		11
2		capr.		12
D	Cantate.	aqua		G
4		aqua		14
5		aqua		15
6		pisc.		16
7		pisc.		17
8		Arie.		18
9		aries		19
D	Iubilate.	aries		G
11	Sol in Gem	taur.		21
12		taur.		22
13		gem.		23
14	Ascention.	gem.		24
15		canc.		25
16		canc.		26
D	Exaud.	leo		G
18	Terme end	leo		28
19		virg.	sunne rise at 4.	29
20		virg.		30
21		libra		31
22		libra		June
23		scorp		2
D	Whitsunda.	scorp		G
25		scorp		4
26		sagit		5
27	Emb. week.	sagit		6
28		capr.		7
29		capr.		8
30		capr.		9
D	Trin. Sund.	aqua		G

Iune hath xxx daies.

Last quartile 3 day, 59 minut. after 11 at night.
New Moon 11 day, 6 minut, after 3 morning.
First quartile 17 day, at 7 at night.
Full Moon 25 day at 11, and 59 minutes morning.

1		Aqu.		11
2		pisc.		12
3		pisc.		13
4	Corp.Chri.	pisc.		14
5	Terme beg	rie		15
6		arie.		16
D	1.Su.af.Tri	taur.		G
8		taur.		18
9		gem		19
10		gem.	sunne rise at 3, 46 minutes.	20
11	Sol in Can	canc.		21
12		canc.		22
13		leo		23
D	2.Su.af.Tri	leo		G
15		virg.		25
16		virg.		26
17		libr.		27
18		libr.		28
19		libr.		29
20		scorp		30
D	3.Su.af.Tr	scorp		Iul.
22		sagit		2
23		sagit		3
24	Iohn Bapt	capr.		4
25	Terme end	capr.		5
26		capr.		6
27		aqua		7
D	4. Su.af.Tri	aqua		G
29	Peter Apos	aqua		9
30		pisc.		10

Iuly hath xxxi daies.

Last quartile 3 day, 28 min. after two after noon.
New Moon 10 day, 19 min. after 11 before noon.
First quartile 17 day, 12 min. after three morning.
Full moon 25 day, 42 minutes after two morning.

		pisc.		11
	Visit Mary	arie		12
		arie,		13
		taur.		14
D	5. S.aft. Tr.	taur.	sunne riseth at foure,	G
		taur.		16
7		gem.		17
8		gem.		18
9		canc.		19
10		canc.		20
11		leo		21
D	6 S.aft.Tri.	leo		G
13	Sol in Leō.	virg.		23
14		virg.		24
15		libra		25
16		libra		26
17		scorp		27
18		scorp		28
D	7 Sun.af.Tri	sagit		G
20	Dog da.bes	sagit		30
21		sagit		31
22		capr.		Aug
23		capr.		2
24		aqua		3
25	James Ap.	aqua		4
D	8 Sun.af.Tri	aqua		G
27		pisc.	sunne riseth at foure, and 30 minutes	6
28		pisc.		7
29		arie		8
30		arie.		9
31		arie.		10

Avgvst hath xxxi daies.

Last quartile 2 day, halfe an houre after two morning.
New Moon 8 day, 38 min. past fixe at night.
First quartile 15 day, 24 min. past 3 afternoon.
Full Moon 23 day, 27 min. past 6 at night.
Last quartile 31 day, 27 min. past 6 at night.

1		taur.		11
D	9 Sun.af.T.	taur.		G
3		gem.		13
4		gem.		14
5		cane.		15
6		cane.		16
7		leo.		17
8		leo.		18
D	10 S.af. T	virg.		G
10		virg.		20
11		libra		21
12	Sol in Virg	libra	sun riseth at five.	22
13		scorp		23
14		scorp		24
15	Assum.Mar	ſcorp		25
D	11 S.af. Tr.	sagit		G
17		sagit		27
18		capr.		28
19		capr.		29
20		aqua		30
21		aqua		31
22		aqua		Sept
D	12 S. af. Tr.	pisc.		G
24	Bartholm.	pisc.		3
25		Arie		4
26		aries		5
27	Dog d. end	aries		6
28		taur.	sunne riseth at five and 30 min.	7
29		taur.		8
D	13 S.af.Tr.	gem		G
31		gem.		10

September hath xxx daies.

New Moon 7 day, 46 minutes past two morning.
First quartile 14 day, at ten in the morning.
Full Moon 22 day, 8 minutes past ten morning.
Last quartile 29 day, at eight at night.

1		Can		11
2		canc.		12
3		canc.		13
4		leo		14
5		leo		15
D	14 S. aft. Tr.	virg.		G
7		virg.		17
8	Nat. Marie	libra		18
9		libra		19
10		scorp		20
11		scorp		21
12		sagit		22
D	Sol in Libr	sagit	sunne riseth at five.	G
14		capr.		24
15		capr.		25
16		capr.		26
17	Emb. week	aqua		27
18		aqua		28
19		pisc.		29
D	14 S. aft. Tr	pisc.		G
21	Matthew	pisc.		Oct.
22		Arie		2
23		arie.		3
24		tauz.		4
25		tauz.		5
26		taur.		6
D	17 S. aft. Tr	gem.		G
28		gem.	sunne riseth at 6 and 30 minut.	8
29	Michael	canc.		9
30		canc.		10

October hath xxxi daies.

New Moon 6 day, halfe an houre after noon.
First quartile 13 day about midnight.
Full Moon 22 day 11 minut. past 1 morning.
Last quartile 29 day, 49 minut. past 2 morning.

1		Leo		11
2		leo		12
3		virg.		13
D	18 Su.af.Tr	virg.		
5		libra		15
6		libra		16
7		scor.		7
8		scor.		8
9	Terme beg.	sag.		9
10		sag.		0
D	19 Su.af.Tr	sag.		
12		capr.		2
13	Sol in Scor	capr.	sunne rise at 7.	13
14		aqu.		14
15		aqu.		15
16		aqu.		16
17		pisc.		17
D	Luke Evan	pisc.		
19		Arie		9
20		aries		30
21		taur.		1
22		taur.		
23		taur.		2
24		gem.		3
D	21 Su.af.T.	gem.		
26		canc.		5
27		canc.		6
28	Sim.& Jude	leo		7
29		leo		8
30		virg.	sunne rise at 7, 30 minutes.	9
31		virg.		10

NOVEMBER hath xxx daies.

New Moon 4 day, somewhat after midnight.
First quartile 12 day, 49 minut. after 9 at night.
Full Moon 20 day, 4 minut. past 3 after noon.
Last quartile 27 day, 58 minut. after 9 morning.

D	All Saints.	lib.		G
2	All Soules.	libr.		12
3		scor.		13
4		scor.		14
5	Powd.treas	scor.		15
6		sagit		16
7		sagit		17
D	23 Su.af.Tr	capr		G
9		capr		19
10		aqu.		20
11	Sol in Sagit	aqu.		21
12		aqu.		22
13		pisc.		23
14		pisc.		24
D	24 Su. af. Tr	ari.		G
16		arie.		26
17		arie.		27
18		taur		28
19		taur	sunne riseth at 8.	29
20		gem		30
21		gem		Dec.
D	25 Su. af. Tr	canc		G
23		canc		3
24		leo		4
25		leo		5
26		virg		6
27		virg		7
28	Term ends	virg		8
D	Advent. Su	libra		G
30	Andrew Ap	libra		10

New Moon 4 day, 53 min. after three after noon.
First quarter 12 day, halfe an houre after sixe at night.
Full Moon 20 day, 26 min. after three morning.
Last quartile 26 day, 44 min. after 6 at night.

1		scor.		11
2		scor.		12
3		sagit		13
4		sagit		14
5		capr		15
D	2 Sun. Adv.	capr		G
7		capr		17
8		aqu.		18
9		aqu.		19
10		pisc.		20
11	Sol in Cap	pisc.	Sun riseth 15 minutes after 8.	21
12		pisc.		22
D	3 Sun. Adv.	Ari.		G
14		arie.		14
15		taur		25
16	O sapientia	taur		26
17	Emb. week	gem		27
18		gem		28
19		gem		29
D	4 Sun. Adv.	canc		G
21	Thom. Ap.	canc		31
22		leo		Ianu
23		leo		2
24		virg		3
25	Christ bor	virg		4
26	S. Stephen.	libr.		5
D	S. Ioh. Eva.	libr.		6
28	Innocents.	scor.		7
29		scor.		8
30		sagit		9
31		sagit		10

Clarke 1629.

A Briefe Discourse concerning the disposition of the Celestiall bodies, with the Eclipses, Yeares quarters, and other necessarie observations for this present Yeare 1629.

¶ *Felices animas, quibus hæc cognoscere primum,*
Inq; domos superas scandere cura fuit.

Onely no predictions of Weather, or cold windie missings, &c.

¶ *Felices animas, quibus hæc contemnere primum*
Et data mendaces cura tacere nugas.

By *Eustace Clarke* of *Sandridge* neer *S. Albons.*

Printed by the Printers to the *University* of *Cambridge.*
MDCXXIX.

¶ A computation of the 7 ages of the world, with other memorable times for this yeare. 1629.

1	The worlds Creation	5599
2	Noahs flood	3942
3	The birth of Abraham	3646
4	The Israelites departure from Egypt	3145
5	The building of the first Temple	2650
6	The Captivity at Babylon	2234
7	The birth of our Saviour	1629
	The building of Babel	3821
	Brute entred this Iland	2735
	The destruction of Troy	2814
	Hercules died	2835
Since	Elias the Prophet, and Homer the Poet both at one time flourishing	2700
	The Olimpiades beganne	2351
	The death of Alexander	1952
	Iulius Cæsar reformed the yeare	1973
	England receiued the Christian Faith	1449
	Iulius Cæsar slain	1671
	The last destruction of Ierusalem	1546
	The Danes entred England	611
	The Conquest	562
	Tilbury Campe	41
	His Majesties Coronation	4

Note that the worlds seaven ages beginne where the figures in order are placed on the left hand.

Of

¶ Of Yeares, Daies, &c.

The Yeare, for the diverſe affections thereof, hath likewiſe diverſe beginnings. Some begin it at the winter ſolſtice; becauſe the Sunne begins then to aſcend. Others at the Spring Equinox becauſe then the yeare begins to beautifie it ſelfe, all things increaſing and flouriſhing, trees and plants budding, &c. Others at the Autumnal Equinox, when, being at his ripeſt perfection, he reſigneth up his whole increaſe.

The Egyptians beginne this yeare July 12, being the firſt day of Thoth, their firſt moneth. The Iewes begin their yeare for Eccleſiaſticall matters, fourteen daies before the firſt full Moon, after the Sunnes entrance into Aries; but for their Civill affaires, in September. The Church of England, and the Date of all writings, reſpect the 25 of March for the yeares beginning: which day is ſuppoſed to be the day of the Worlds creation, of Abel ſlain, of Sodom burnt, of the promiſe made to Abraham, of Iſaac to be ſacrificed, of the Iſraelites deliverie from the Egyptian bondage, &c as alſo of the conception of our Saviour in the wombe of the Virgin.

Of yeares there are divers kindes; of which in this place to ſpeake were to little purpoſe. Onely remember, that our Iulian yeare conteining 365 daies, 6 houres, is greater by 10 min. 48 ſeconds then the Romane yeare, which conteineth onely 365 daies, 5 hour. 49 min. 12 ſec. Yet is neither of theſe preciſely true, by reaſon of the unequall proceſſion of the Equinoctiall, making the true quantitie of this yeare 365 daies, 5 houres, 55 minutes, 36 ſeconds.

As the Yeare, ſo the Day hath likewiſe diverſe beginnings. The Romanes beginne it at midnight, and ſuch is our account for faſting daies. The Vmbrians, Tuſcans, Iewes, Athenians, Italians, Egyptians, Theebes and

owles begin it at Sunsetting: so do we our festival dates. The Babylonians, Persians, and Bohemians begin their day at Sun-rising; and so do our Lawyers account it. But Arabians, Astronomers, and Sluggards begin their dates at noon.

The day is either Naturall (which some call the day Civill) or Artificiall. The day Naturall conteineth 24 houres, and almost the 15 part of an houre; and is either equall or unequall. The equall is the time of one revolution of the Equator, and almost 9 min. The unequall is likewise the time of one revolution of the Equator, and so much more over as the Sunne in his proper course hath surveyed from West to East; which inequalitie happeneth both from the Sunnes unequall motion, and likewise from the diverse ascention of the Ecliptick. A day Naturall notwithstanding, whether equall or unequall, is the time wherein the Sun returneth to any selfe same point in the heavens.

The Artificiall day is the time intercepted betwixt the rising and setting of the Sunnes center in the Horizon: and with the Iewes this is always of 12 houres, the sixth houre being high noon, so that their houres vary in quantity, as the day it selfe. Hence, whereas it is said the labourers came into the vinyard at the 11 houre, it cannot be determined what time of the Naturall day it was (the naturall day being unknown) but it was at 5 of the clock in the afternoon of the Artificiall day.

The names and order of our weekly dates are partly from the Planets; as of Saturday, Sunday, and Monday it is plain: the rest are as followeth.

Wedensday, *Belgic.* Wodens-dagh; from Wode, Mercuries name *Belgic.*

Thursday, from Thor, an auncient image of Iupiter in Germanic.

Friday, from the *Saxon* Fridach; the same that Venus.

These are from the Planets: but for Tuesday some de-

rive

ve it from Tuisco, who lead the Germanes from the con-
sion of Languages at Babel, in whose honour after his
ecease, they so called that day.

Their order notwithstanding is diverse from the order
of the Planets; every day having his name from the Pla-
net ruling the first houre afternoon that day; which is al-
wayes the third from that of the day foregoing.

Example.

Sunday, the 1 houre afternoon the Sun ruleth, Ve-
nus 2 houre, Mars 3, Mercurie 4 &c. so that proceeding in
this manner, and attributing one houre to every Planet,
we finde that the next day the Moon ruleth the first houre
afternoon being the third from the Sunne.

The names of the Festivall dates I omit, excepting
the moveable feasts whose names are as followeth;

Septuagesima, from 70; because the Church from thence
observeth 70 dates, in remembrance of the Israelites capti-
vity in Babylon.

Quadragesima, likewise of 40, because the Church ob-
serveth 40 dates of fasting, in remembrance of Moses, E-
lias, and our Saviours fasting fourtie dates.

Easter, the primum mobile of the other Feasts, hath with
us the name of Eoster, a Goddesse to whom the Saxons did
sacrifice this moneth of Aprill, by them called Eoster-
monath.

Observe by the way, that of Easters there are three
sorts; viz. the Iewes, the Romanes, and ours now used;
differing as followeth:

The Iewes Easter was commanded to be kept the 14
day of their first moneth Abib, being the first full Moon
after the Spring Equinox. But they afterwards grow-
ing superstitious in their opinion of dates, would not
keep their Easter upon Mondaies, Wedensdaies, or Fridaies;

2. *King* 23. 22.

But the Romanes and ours being alwaies kept vpon the Sunday according to the Councell at Nice in Pontus, *Anno.* 322, have notwithstanding sometimes 5 weekes difference, as in the yeare 1622; the reason whereof, as likewise of the distinction of the yeares in the Kalendar, ariseth from the ouer greatnesse of our Iulian yeare; for whereas by the institutours of our Iulian yeare the Equinox was placed the 21 of March, as its fixed place in the Kalendar, we, according to the Councell before said, are to celebrate our Easter the Sunday following the first full Moon after the 21 of March: but whereas by the ouer greatnesse of the Iulian yeare, the Equinox hath since retyred to the 10 and 11 of March, so that sometimes the full moon happeneth betwixt the true Equinox and the 21 of March, the Romanes haue therefore corrected the yeare, making it to consist of 365 daies, 5 houres, 49 minutes, 12 seconds: keeping their Easter the Sunday next following the true entrance of the Sunne into Aries &c.

Rogation-Sunday, so called because of certain ceremonies auncientlyused; much like the Romanes Amber-vatia, Februa, &c.

Whitsunday, *quasi* albi solis dies: noting the serenity of the season called Penrecost, because there be 50 daies betwixt Easter and Whitsunday inclusively: &c.

The Yeares Quarters.

THe yeare both ebbes and flowes; now lives now dies,
By Autumnes ebbe, or Spring-tides new supplies,
Her sonnes, as diverse coulered in attire,
As heavenly lampes have sundry working fire,
Their auncient pedegree do thence declare
All-shapt Vertumnus made th' all coulerd yeare:
Yet each of these his quarters duely keepes,
Duely with holds his drops, and duely weepes.

THe Spring (the first quarter Astronomicall) begins March the 11 57 minutes before one in the morning:

ning: when the yeare (like a Serpent, for so the Egyptians did character it) begins to revive by heat of the approaching Sunne; seeming of late (positâ cum pelle senectâ) to renew the vigour and beauty of his youth. Chloris now taketh possession of her large dowrie (the gift of her kinde Zephyrus) the soveraignty of all green herbs and flowers, causing the earth, that before sat sighing many cold and bitter blasts, now to put on her gawdy apparrell; this quarter being (as May was stiled by the Poet) pictor mundi.

Iam sylva floret, jam vinea &c.

The Spring is said to feed the eie, as Summer and Autumne both the eie and mouth, but Winter it selfe to consume every thing: it is naturally hot and moist, continuing to the 11 of Iune.

SUmmer begins Iune 11 at 7 and 43 minutes at night, when the Sunne in his reverse and crabfish-like motion shall enter the 1 point of Cancer, his Summer Solstice, and farthest period of his northern pilgrimage, making the longest daies, and shortest nights to all the northern world: viz. the longest day in our Elevation of 52 degr. 16 houres 30 minut. This of all the yeares 4 feet (so Orpheus compared the 4 quarters) commonly escapeth drie-shood; and is of a larger size then the rest, by reason of the Sunnes apogeon, in the 10 degree of ☌: Eurus now rising with the Sunne, bloweth continually.

Pulvereámque trahens per summa cacumina pallam,
Verrit humum &c.

Summer, *quasi* Sunne-mehr. plus solis, *Germ.* it is naturally hot and dry, and continueth till the 13 of September; what time the Sunne kindely taking his leave of Virgo or the maid, shall apply his beames unto the Ballance.

AVtumne (*ab augendo*, things being then increaſed, *Scalig.*) begins Septem. 13. at 7 of the clock, 38 min. in the morning: the Sunne then entring his ſecond equinoctiall Libra, the ſecond time equally ballanceth the daies and nights. The yeare now growing toward his old age becommeth dimme with miſts and vapours, the earth being enwrapt therewith as with her mourning weed, at the departure of the Sunne her love.

The quarter continues till Phœbus in his ſwift courſe, having out-ſhotten Sagittarius, and attained his Hyemal Solſtice, ſhall according to the vulgar, have finiſhed his 12 yearly labours through the 12 ſignes of the Zodiack.

WInter came in very cold and late at night, viz. at 9 of the clock Decemb 11 the laſt yeare, the moſt unpleaſant, ſluttiſh, and uncomely (though white) of all the ſiſters. Her icy pavements a fit looking glaſſe, and lively (rather lifeleſſe) reſemblance of mans declining age: cold, hoary-headed, froward, with continuall chiding of the Northern windes, whoſe rough and boyſterous play forceth the beauty of the earth, and her Summer pleaſures to give out. Moreover, trembling, ſqualid and having her daies at the ſhorteſt (even as old age it ſelfe) Phœbus in the extremitie of cold ſeeming unwilling to forſake his bed. Winter, *quaſi* Wind-here, Lady of the windes, (by reaſon of the tempeſtuous ſeaſon) *Germ.* It is cold and moiſt, continuing till the Sunne having bathed his ſteeds in the moiſt ſignes of Capricorn, Aquarius, and Piſces, ſhall afterwards drive them to the pleaſant hils of Aries, being mounted to his Vernall Equinox.

See how the founts, whom Winters art hath glaz'd,
See how the hils in penant ſheetes of ſnow,
See how the ragged flocks with cold amaz'd,
Wait the Cataſtrophe of Winters wo:
Since all delights live then by Phœbus fire,
Turne gentle Phlegon, force him to retire.

Eclipſes

Eclipses 1629.

THe Sunne will be two ſe eclipſed this yeare, neither of which will appeare in our horizon, but to others as followeth;

The firſt happening June 11, at 4 in the morning, will be ſeen in 127 degr. of long. 15 degr. of North latitude diſtant from us, of 21 degr. of long. 52 of lat. 5262 miles: the quantitie of the Eclipſe in the ſaid place, is 12 digits, 19 min the beginning a quarter after two, the true apparent conjunction at 4, the continuance 3 hour. 29 min.

The other Eclipſe, happening Decemb. 4, at 4 of the clock, and 6 min. afternoon; will be ſeen in 321 degr. of long. 27 of South latit. diſtant from us 5687 miles: the quantitie of the Eclipſe in the ſaid place is 11 degrees 36 minutes the beginning 12 minutes before 2 of the clock the true apparent Conjunction, at 4 and 4 minutes, and the continuance, 4 houres, 56 minutes: The Eclipſe will happen in ſuch manner that at the midſt thereof the utmoſt skirt of the Sunnes body not being Eclipſed, will, like a ring encompaſſe the obſcured parts: the reaſon, becauſe at the conjunction the Sunne being neare his perigeon, hath his apparent diameter at this time greater then the Moones by 2 minut. 4 ſec. ſo that having no apparent latitude, it is manifeſt how in this manner ſhe ſhould intercept his light.

The Sunnes Eclipſe is onely an averſion of his beames from our ſight, by the interpoſition of the groſſe body of the Moon. This never happeneth, but when the Sunne and Moon are in a viſible conjunction; there being 3 kindes of conjunctions: The mean, true, & viſible; now the true and viſible conjunction, differ in time, unleſſe the true conjunction happen at noon, or in the 90 degree; the further it happeneth from the 90 degree, the greater is the Moons paralax and difference of theſe conjunctions in ſuch manner notwithſtanding that if the true conjunction happen betwixt the 9 degr or the meridian, and the Sun-riſing it alwaies followeth the viſible conjunction, but in the afternoon it goeth alwaies before it &c.

Alſo

Also obserue that the Sunnes Eclipse proceedeth from the west toward the East part of his body; but the Moons Eclipse beginneth at the East, and endeth at the West part thereof.

The Moons Eclipse is the interposition of the dark body of the earth, betwixt the Sunne and the Moon it selfe, or rather that priuation of light following this interposition: This happeneth onely in the true oppositi-on of the Luminaries, the middle of the Eclipse being commonly accounted the true opposition, which notwithstanding is not precisely so. Here obserue that if the Moon be distant from the head or taile of the Dragon, (otherwise called the Nodes) 15 degr. 12 scrup. she sufferеth no Eclipse: Likewise if the Moons apparant latitude exceed 34 min. 5 sec. the Sunne cannot be any thing Eclipsed. Both the Eclipses are various for diuerse causes: namely, the Moons unequall latitude, the diuersitie of their apparant Diameters: And in the Moon, the unequall thicknesse of the earths shadow: of which here is no leisure to discourse.

Briefe notes concerning the magnitudes and motions of the Celestiall bodies.

The earth and water making one onely globe are in compasse 21600 miles, the Diameter being 6873, the Semi-diameter, 3436 and a halfe.

This globe is in proportion to the whole world, conteined within the firmament, as one to 115623400095703 and an eighth part: the distance of the 8 Spheare supposed 22612 semi-diam. and halfe.

Also the earth, according to Clavius, is in proportion to the aire as 23 to one; to the Element of fire as 1 to 38290.

The

The earth is in proportion to

			whose distance
	The Moon, as 42 to 1.		19416
	Mercurie, as 19 to 1.		395 1400
	Ven. as 6 & one 6 part to 1		395 1400
	The Sunne, as 1 to 1. .9		395 1400
	Mars, as 13 to 1		5995820
	Iupiter, as 1 to 13		13709640
	Saturne, as 1 to 22		16249800 miles
to starres of the	magnitude, as		
1		1 to 68.	
2		1 to 25 & a halfe	22612 and a
3		1 to 11.	halfe semidia-
4		1 to 4 & a halfe.	meter.
5		1 to 1 & a 8 part.	
6		13 to 1.	

The number of fixed Starres is commonly defined 1725, although their number cannot indeed be exactly limited, being almost infinite, as Astronomers do easily descrie, by the help of an hollow instrument the invention of Galilæus: **By the said instrument** Venus **is discerned with the eie, increasing and decreasing as the Moon;** Saturne **is seen having 3 bodies;** Iupiter **having 4 other Starres moving with him for his attending Guard: likewise the** Sunne **himselfe appeareth diversly spotted as the** Moon, **&c. Notwithstanding of all the said fixed Starres, not any two (saith** Bodinus) **are directly opposite one to the other** Tauri quidem oculus, cordi Scorpionis longitudinis & latitudinis gradibus & minutis opponitur, at trajectio radiorum non est opposita.

Saturne **perfecteth his revolution in** 30 **yeares, his mean diurnall motion being minutes his** apogeon Ian. 1, **this yeare in** 29 **degr.** 57 **minut. of** Sagit. **The planet it selfe at that time in** 23 **degr.** 35 **minutes of** Libra.

Iupiter **perfecteth his revolution in** 12 **yeares, his mean diurnall motion** 4 **minut.** 59 **seconds, his** apogeon Ian. 1

in

in 7 degrees 11 minutes of Libra: The planet it ſelfe in 16 degr. 16 min. of Capricorn.

Mars paſſeth through the Zodiaque in 2 yeares: his mean diurnall motion 31 minutes, 27 ſeconds. The Apogeon of Mars Ian. 1 in 29 degr. 7 min. of Leo, Mars himſelfe in 29 degr. 51 minut. of Sagittarius.

The Sunne, Mercurie, and Venus, perfect their revolutions in equall quantity of time; their mean diurnall motions being the ſame, viz. 59 minut. 8 ſec. The Suns Apogeon is in 10 degr. 23 min. of Cancer, himſelfe Ian. 1 at noon in 20 degr. 57 minut. of Capric. The Apogeon of Venus in 16 degr. 42 minut. of Gem. Of Mercurie in 1 degr. 7 minut of Sagit. Venus her ſelfe Ian. 1 in 8 degr. 2 min. of Sagit. Mercurie in 28 degr. 3 min. of Sagit. Mercurie is never further diſtant from the Sunne then 29 degr. by reaſon whereof he is ſeldome ſeen. Venus is never further then 48 degrees diſtant: ſhe is this yeare Orientall, our earthly Lucifer, untill the ſixth of July: Occidentall, or our evening Heſperus all the yeare after untill the 24 of Aprill 1630. Notwithſtanding by reaſon of her North latitude, ſhe may ſometimes appeare both riſing before the Sunne, and likewiſe ſetting after him, being the ſelfe ſame day both our morning and evening Starre.

Seu matutina Venus, ſeu veſpertina, refulges,
Non habet hoc cœlum pulchrius omne jubar.

Concerning the foreſaid magnitude, diſtances &c. of the ſuperior bodies compared to the earth; to ſtrangers in this art they may ſeem incredible; as namely that the Sunne, appearing but a foot Diameter, ſhould notwithſtanding exceed the earth 139 times: That the Moon, appearing almoſt as great as the Sunne, ſhould be leſſe then the ſame 5818 times, &c. which as the ignorant account meer fictions, ſo the learned themſelves may not unworthily admire the extream induſtry and acute demonſtrations herein uſed.

Example

Example.

That by the Moons paralax (Observed as Ptol. lib. 5 chap. 12) should be argued her exact distance from the earth, by the same distance her magnitude compared to the earth; also by the diameter of the earths shadow at the said distance to be deprehended the utmost extent thereof; likewise by most certain demonstrations both from the Moons paralax and Sunne eclipse, to be collected the perfect distance and magnitude of the Sunne, whose paralax not observed by any instrument is after calculated by his known distance, &c. things not effected nisi Deo præcunte, as Plato in Epinom. Their severall demonstrations are not here to be expected.

No marvell then that Astronomie should be regum ac principum Philosophiæ (as Renhold) a study proper to kings; though now neglected of most, embraced onely of those, qui magno & Philosophico animo virtutem gratis amplectuntur: Si nihil attuleris ibis Homere. Hence Astronomie, although the most auncient of all sciences, is notwithstanding esteemed like a younger brother, as having neither lands nor living.

Howsoever the science it selfe, (supported by the wings of Arithmetick and Geometrie,) may not unworthily be stiled, aquila scientiarum. Plato saith, our eies were chiefly given us for the attaining of it: also to the neglect of this, with the rest of the Mathematicke he ascribeth the plague at Athens not to be quenched according to the Oracle but by doubling the Cube

Σοφώτατον ἀνάγκη τὸν ἀληθῶς ἀστρόνομον εἶναι,

saith the the same Plato; in regard of the necessity of it, by reason of the mutuall dependencie of Sciences in Philosophy. And although in such a point of time, as mans life, none be able to compasse the perfection of this onely Science; nevertheless the principles thereof by students are not to be neglected,

as,

as namely, the motions of the Orbes and Planets, with the reason of their swifter or slower motions, the reason of the Solsticiall and Equinoctiall seasons: likewise how the Poles elevation how the declination of the Sun should determine the daies so variously; also the reason of the Eclipses, and why they happen not in every conjunction and opposition; besides the position of Cities, Countries, &c. Hęc initia ignorare homines literatos, turpe est & alienum humanitate; *Melanct.*

Iopas a shepheard, at a banquet can sing you, --errantem Lunam, Solisq; labores, *Virg.* Likewise for the starres and Planets, we read that Achilles a souldier had them ingraven by Vulcan in his shield, as things not to be neglected in the most troublesome and dangerous times; worthy the defence and patronage of the greatest worthies, such as was Achilles. Euripides can tell us, that Hectors souldiers (no lesse then Achilles) were expert in Astronomie, observing the times of their watch by the motions of the starres:

Δύεται σημεῖα καὶ ἑπτάποροι πλειάδες
Αἰθέριαι μέσα δ' αἰέτου οὐρανοῦ ποτᾶται,

An elegant description of the third watch in the Spring time. But these may seem impertinent, as likewise for the necessitie of this Art in generall (the neglect whereof onely in the true description of the yeare, must needs occasion a sudden and infinite confusion of religions, histories, contracts, &c.) to enlarge our discourse therein were beyond the due carriage of this book. We may notwithstanding remember, that for these and other necessarie uses of Astronomie (especially for predictions Astrologicall) the Egyptians were wont to character for these sciences, the Heavens scattering silver dewes.

¶ Of Weights and Measures used in *England.*

Two kinde of Weights are commonly used: one called Troy waight, (some say because it was first used in Troy)

Troy) the other called Avoir-de-poiſe: the firſt containing 12 ounces, the other 16 being greater then the firſt, whence it is called Avoir-de-pois, that is, having more weight then the other. The Troy weight is divided into ounces, penſweights, graines, mites, &c. The pound containing 12 ounces, 240 penſweights, 5760 graines, &c. The Avoir-de-pois pound is divided according to ounces, dragmes, ſcruples, graines: the pound containing 16 ounces, 128 dragmes, 384 ſcruples, 7680 graines. With Troy weight is weighed wheat, Lead, Gold, Silver, &c. By the Avoir-de-pois is weighed all kinde of Grocery, all groſſe wares, and Phyſicall drugs, &c.

Of the weight of Gold now currant.

33 ſhillings	in weight	8 pen.	20 gra.	6 mit & dim.
22 ſhillings	is	6 pen.	10 gra.	16 mit.
16 6 pence	is	4 pen.	10 gra.	13 mit. & dim.
11 ſhillings	is	3 pen.	5 gra.	8 mites.
5 6 pence	is	1 pen.	14 gra.	halfe a mite.
2 9 pence	is		19 gra.	7 mites.
30 ſhillings	is	8 pen.	18 gra.	15 mites.
20 ſhillings	is	5 pen.	20 gra.	10 mites.
10 ſhillings	is	2 pen.	22 gra.	5 mites.
5 ſhillings	is	1 pen.	11 gra.	2 mites.
2 6 pence	is		17 gra.	halfe a mite.

A note of their currancie.

In 33 ſhillings		4 gra. halfe.
22 ſhillings		3 graines.
16 ſhil. 6 pence		2 gra. halfe.
11 ſhillings		2 graines.
5 ſhill. 6 pence	The remedie ought not to exceed	1 graine.
2 ſhill. 9 pence		halfe a grain.
30 ſhillings		4 gra. halfe.
20 ſhillings		3 graines.
15 ſhillings		2 gra. halfe.
10 ſhillings		2 graines.
5 ſhillings		1 graine.
2 ſhill. 6 pence		halfe a grain.

Every piece not wanting above the double of their remedie is currant, with 2 pen. a grain for every grain above the true remedy. If it want not above the remedie, it is currant without any allowance, as if it were just weight.

A penitweight is 24 barley cornes taken out of the midst of the eare and dryed; 20 penitweights make an ounce, and 12 ounces a pound Troy; of which this weight is understood, as is before said

Of weights in generall observe, that foure may suffice to weigh any quantity not exceeding 40 pounds, viz. 1, 3, 9, 27. Example. Equally to ballance 18 pounds, put in one scale 27, in the other 9: for 23, put in one scale 27, in the other 1 and 3. Also if to these you adde 81, 243, 729, they may produce any weight not exceeding them all in quantitie.

FINIS.